

country and employs nearly 200 skilled mechanics, who are very busy turning out the various tools used in the manufacture of the machine.

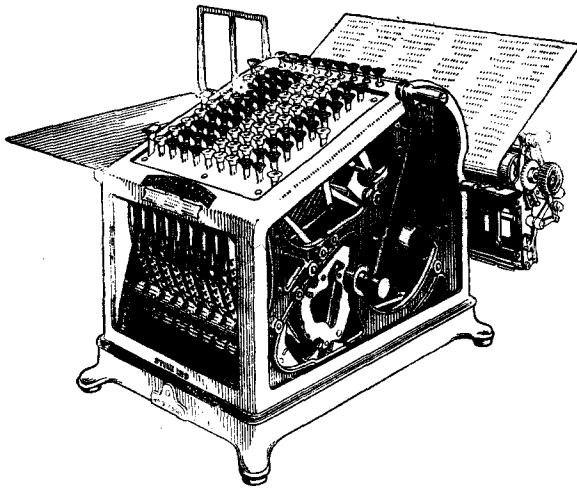
The Burroughs machine is sometimes criticised on the ground that it contains so many parts, but the wonderful length of life of the machines in constant use proves conclusively that there are only enough parts to make a perfect machine for a long length of time. In this connection we might compare two watches, one made to sell for a dollar, the other a good Swiss or American made watch. In the good watch we have more parts, more springs, but we have accuracy and long life. In the other we have fewer parts, also a constant doubt as to the accuracy of the watch, and very short life. In the dollar-watch the number of parts has been reduced to bring the manufacturing cost within the required limit. This makes it necessary for each part to perform the work that should be borne by two or three, and in doing this that part is subjected to great wear, which soon destroys its accuracy.

Mechanical Accounting.

BY THOMAS M. JONES.

When Mr. Burroughs was endeavoring to raise enough money to perfect his invention, the greatest inducement he had to offer to his prospective backers was that some day they might be able to sell as many as 8,000 machines to the banks in this country. At the present time there are over 65,000 Burroughs machines in use, and hardly one-third of these are used by banks. The first machines that were sold were fitted with a paper carriage to accommodate a roll of paper only. This, at that time, being the only style of paper desired by banks, whose use for the machine was simply making their balances. The first need for a paper carriage to accommodate wide sheets was made apparent by the needs of cotton dealers, who found that they could save a great deal of time by invoicing their cotton weights on the adding machine. Cotton weight sheets were so ruled as to accommodate the weights of one hundred bales. The wide paper carriage was

then devised for this work, and its uses are at the present time almost unlimited. The idea is almost general in the minds of those not conversant with the many uses of the adding machine, that its field is limited almost exclusively to the requirements of the banker. The fact, however, that hardly one-third of the machines in use at the present time are in banks conclusively disproves this idea. Adding machines are now in use extensively by the manufacturer, jobber, retailer, railroad and insurance, and gas and electric companies, and the cotton, oil and coal businesses, dairies, private residences, municipalities, and the United States



Regular model Burroughs adding and listing machine, capacity 999,999,999, equipped with typewriter carriage for tabular work on broad sheets, ledger leaves, etc., up to 18 inches wide. Burroughs are built in fifty-eight different styles, for hand or electric operation, with capacities up to 999,999,999,999,999

Government, and are conspicuous by their absence in any up-to-date business establishment.

The adding machine's work in the bank compares very closely to its work in mercantile concerns. The banker is really a merchant who deals in money for which he pays a certain rate of interest, and sells at a profit of from three to ten per cent. A check represents an order for money just the same as a salesman's order is a requisition for merchandise. In banking establishments adding machines are used for balancing the teller's cash, making out remittance letters, clearing house exchanges, proving the postings made by the bookkeeper

and balancing daily his work, multiplying interest and discount, daily, monthly and yearly statements and in various other ways.

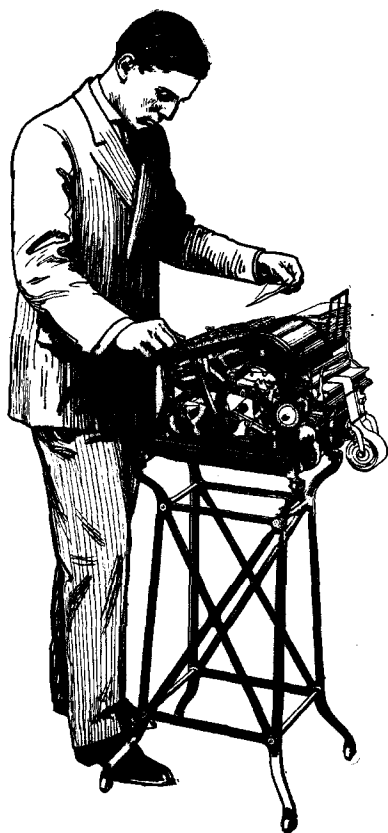
In the manufacturing concerns, the adding machine is invaluable. It enables the bookkeeper to prove daily the correctness of every entry made in his books by what is known as the "Proof of Posting System." He can then prove the addition of his ledger by the use of the statement machine which will make out monthly statements, putting down the charges and credits and extending the balance by means of subtraction. This machine is also equipped, when desired, with letters so that the operator is able to put down an abbreviation of the month and such words as Debit, Credit, Balance, etc. When all the entries in the ledger have been proven, the addition and extension checked, the trial balance then is really a mere form. The trial balance of to-day is merely a proof, made monthly, of the bookkeeper's work, and is not used for statistical purposes, as the data it gives is sufficient for such, therefore if the work is proven and balanced daily, the trial balance is then rendered very simple. The time for making up monthly statements and taking off the trial balance falls right at the end of the month and without the assistance of the adding machine the bookkeeper is badly snowed under in his work for a period of time.

The machine is also used for recapitulating sales, both by salesmen and by the department, used on pay-roll work and very extensively in cost accounting, rendering this particular work, which is of vast importance, very simple. By a system used in connection with the adding machine the cash book can be practically done away with, so far as the entering of the daily receipts is concerned, and the purchase ledger can be entirely dispensed with.

In a jobbing house the machine is used in practically the same way as by the manufacturer, except that the jobber has a greater amount of work in the recapitulation of sales, as is also the case in retail concerns and department stores, and in the latter all of the numerous sales made are audited very quickly on the adding machine.

In the railroad and insurance fields, the use of the adding machine is so extensive that the Burroughs Company has established departments of railroads and insurance. The work of these departments being devising systems for applying the machine to the

various uses of these concerns. Special machines are constructed for this work that will add and list, or list and not add, from one to four columns of figures at a time, and as practically all of the accounting done by these companies is of a statistical nature, the adding machine will eventually be so applied that it will handle nearly all of this work.



L. E. Spalding, of St. Louis, champion adding machine operator. Mr. Spalding holds the world's record of 500 miscellaneous bank checks correctly listed and added on the Burroughs in 6 minutes, 18 seconds.

In the leaf tobacco business, which has not been mentioned, invoices are used on which is shown the number of the case, the gross weight and tare of same and actual weight of contents. These four columns can be listed at one operation on a machine especially constructed for this work, and when the total is taken the gross tare and actual weights are all added at one operation.

When this invoice is made in duplicate by the use of a carbon sheet, the duplicates can be retained in loose-leaf binders as a sales book. This particular use is also applicable in oil, cotton and coal businesses, special Burroughs machines being so constructed as to fit their particular requirements.

In gas and electric light companies, the entire ledger can be made out on the adding machine, for most of these concerns handle their accounts by numbers instead of names, so the ledger sheet may be inserted in the machine and filled out complete. In the gas company's business the account number, the number of cubic feet for both lighting and fuel gas and the earnings are listed. Receipts are also handled by these companies on the adding machine, putting down the account number, the amount of discount and amount of cash received. With the electric lighting companies the use is just the same, instead, however, of listing feet, they list kilo-watt hours.

The United States Government, at the present time uses in the vicinity of five hundred machines, these being distributed in practically every department of the service.

Quite a number of adding machines have been sold to private individuals to be used in their residences for handling the accounting necessary therein, and to contractors and constructors, who use the machine for figuring estimates on jobs and then handling the cost accounting of their contracts.

The foregoing applications of the adding machine give some idea of the vast number of uses to which it has been applied. The possibilities and applications of the machine seem unlimited and the business is practically in its infancy.

The Burroughs Adding Machine Company is at present manufacturing fifty-eight different styles of adding and listing machines, and in order to better care for its ever increasing business has established offices in every city of importance in the United States, and now has representatives in practically every country on earth.

In the course of this lecture a number of slides were used, showing the various parts of the Burroughs machine and the course of the machine in its progress through the Burroughs factory.

One of the views showed the Small Parts Inspection Department, where every part entering into the construction of the ma-

chine is tested by some special instrument devised to absolutely determine the accuracy of the part.

Another showed the Assembling Department, where all these parts are brought for building up into the various sections of the machine. Then there was the Erecting Department, showing the various sections being built into a complete machine.

Following this comes the Inspection Departments, where the machines go after leaving the hands of the erectors. The inspection of the machine is very thorough. The first inspector is not limited to the amount of time he puts into the inspection of any machine. It does not leave his hands until he is satisfied, and then it passes to one of the men who are known as "Second Inspectors," who carefully examine every part of the machine for perfect workmanship, material and erection. The machine then goes to the final inspectors, who are responsible for the perfection of the machine. They test the machine in every conceivable way, and take off record slips showing the work. The machine then goes to the shipping room.

Another view showed the Special Machine Department, where all Burroughs machines having special features are assembled and tested by special inspectors.

There were a number of views of the office departments, including the Accounting Department, General Offices, Stenographic Department, Business Systems Department, etc. The latter is a most important department of the Burroughs work, and is devoted to investigating the uses for the machine in all lines of business and developing ways in which the usefulness of the machine may be enlarged.

PRECIOUS METALS IN WASHINGTON.

The mines of Washington reported to the statisticians of the United States Geological Survey an output of only \$221,648 in gold in 1906, a decrease of \$183,430 as compared with the production of 1905. The Republic district, in Terry County; the Pierre Lake district, in Stevens County, and the Mount Baker district, in Whitman County, divide the production. Silicious ores predominate, the placer output being about \$20,000.

The silver production of the State in 1906 was insignificant, amounting to only 45,878 ounces.

Statistics of the production of the precious metals in the United States in 1906, prepared by Waldemar Lindgren, geologist, are published by the United States Geological Survey in an advance chapter from "Mineral Resources of the United States, Calendar Year 1906," which is now ready for distribution.